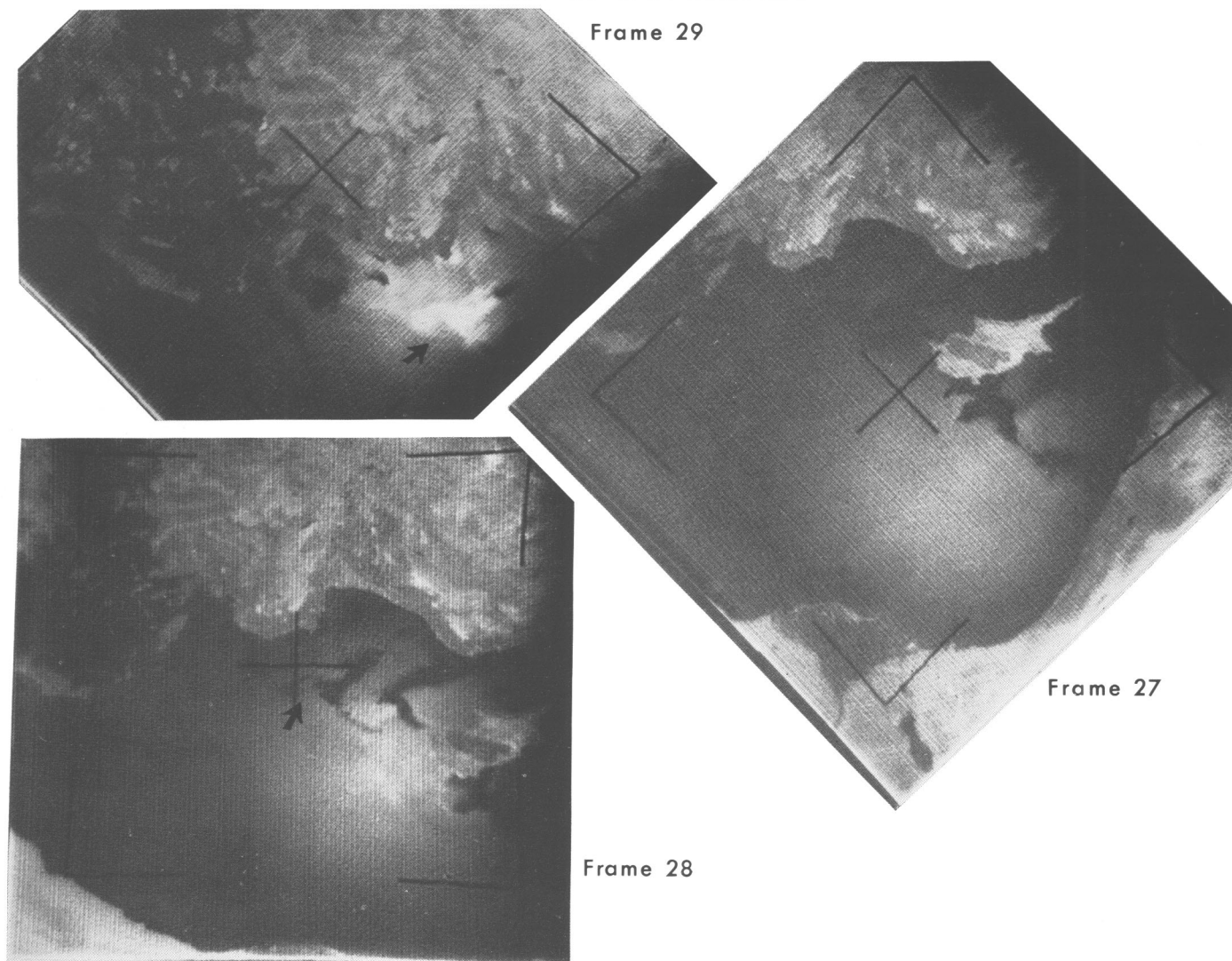


PICTURE OF THE MONTH



Reflection patterns near Cyprus. Arrows indicate the same smooth sea area on two pictures, bright on 29 and dark on 28.

TIROS VIII pictures of the eastern Mediterranean Sea, taken at 1010 GMT June 23, 1963 on pass 059, were read out at Point Mugu, Calif. on pass 060. The dark vegetated highlands of Cyprus contrast with the surrounding arid lowlands. Similarly the vegetated Nile Delta is dark compared to the adjoining desert.

Cloud observations at 0600 and 1200 GMT show clear to scattered cumuli over Turkey and Cyprus. No ship reports were available to indicate the cloudiness over the open sea but the pictures give no hint of clouds except the few over land. The pressure field should have produced light northerly winds, but the directions reported at land stations were variable, indicating local influences.

An extensive diffuse sun glint reflection from the roughened sea surface contrasts sharply with irregular dark water areas. The dark areas south of Turkey on frame 28 and south of Cyprus on frame 27 indicate irregular regions where the sea surface was relatively smooth, while the brighter area farther to the south of Cyprus on frame 27 indicates that the sea surface was more roughened. This

explanation, invoking reflection from a sea of varying roughness, is confirmed by comparison of the area indicated by arrows on frames 28 and 29. The very bright areas on frame 29 south of Turkey appear as a dark region on frame 28. The brightness is due to specular reflection from a smooth region at the instant of proper angular relations between satellite and sun. As the satellite moved toward the southeast (frames 28 and 27, in that order) the smooth surface did not contribute to the diffuse sun glint as did the roughened sea surface.

The pictures therefore indicate that the sea surface had irregular areas with sharp boundaries in which the surface was rather smooth. Two possible reasons may be advanced. First, the wind field may have had irregular mesoscale distribution with fairly sharp boundaries which produced corresponding sea-surface irregularities. Alternatively, the water surface may have contained organic or inorganic substances which changed the surface properties of the water so that even with a uniform light wind, some sea-surface areas remained smoother than others.